

EXPLANATION OF PLATE IV.

Fig. 1. *Eupyrgus hispidus*: *a*, natural size; *b*, $\times 66$.

Fig. 2. *Eupyrgus scaber*, Lutken: *a* & *b*, $\times 66$.

Fig. 3. *Astropecten Lutkeni*: *a*, twice the natural size; *b* & *c*, magnified portions of the upper and lower surface of a ray.

Fig. 4. *Astrogonium aculeatum*: *a*, upper, and *b*, lower side, twice the natural size.

Fig. 5. *Astrogonium boreale*: *a*, upper, and *b*, lower side, magnified twice.

BIBLIOGRAPHICAL NOTICES.

On a True Parthenogenesis in Moths and Bees; a Contribution to the History of Reproduction in Animals. By C. T. E. VON SIEBOLD. Translated by W. S. DALLAS. 8vo. London: Van Voorst, 1857.

IN this remarkable little work, the learned Professor of Zoology at Munich has called the attention of physiologists to a series of phænomena which threaten to produce a considerable disturbance, at all events for a time, in the generally received opinions regarding the laws of generation. It is usually supposed that in order to the production of fertile eggs the concurrence of male and female elements is necessary, but it appears from the observations of Von Siebold, as here recorded, that in some cases the eggs of virgin female insects are capable of giving birth to a progeny which passes through all its stages of development in the same way as if it had been produced from fecundated eggs. To this phænomenon, occurring in some species as a regular condition of specific existence, in others under exceptional and at present inexplicable circumstances, our author gives the name of *Parthenogenesis*, originally made use of by Professor Owen to indicate the alternation of generations.

Although numerous instances of a *lucina sine concubitu* in insects and spiders had already been described by different authors, and some curious questions were started by the constant occurrence of females only in certain Crustacea, all these cases were looked upon by physiologists in general as of a very doubtful nature, and no one certainly anticipated that such apparently exceptional phænomena would have led to the development of a theory of the constitution of the societies of social insects, such as is given by Von Siebold in the work before us. In fact, most of the recorded cases of the production of fertile eggs by virgin moths are so destitute of all those elements of exactitude which alone could render them conclusive, that our author, after a careful critical examination, rejects them all as untenable, at all events on the evidence furnished by their describers. The views put forward by Von Siebold himself are, however, so heterodox, according to the present physiological faith, that we have no doubt they will be received with considerable incredulity by many, and although we must confess that we cannot see any flaw in the evidence, one distinguished authority at least has already stated that he con-



